32

C L A I M S

1. Method of digitally equalising sound from loudspeakers placed in a room having a combined loudspeaker/room transfer function, said method comprising placing a microphone in the room, emitting one or more pulses from a loudspeaker through an amplifier and measuring the impulse response in a desired listening position, said method is c h a r a c t e r i z e d in the following steps:

a) the measured impulse responses are pre-processed by an algorithm and weighted

b) the output from the pre-processing algorithm is split by an algorithm and adapted to at least two frequency bands using cross-over filters and down sampling

c) the output from the band splitting algorithm is fed to at least two frequency band correction filter design algorithms

d) the output from the band correction filter design algorithms are fed to a delay and amplitude aligning algorithm

e) the output from the aligning algorithm is fed to a post processing algorithm

f) storing and using the output from the post processing algorithm to equalise in real time a sound source that is fed to the amplifier.

2. Method according to claim 1, c h a r a c t e r i z e d in that the output from the pre-processing algorithm is divided into typically three ,

frequency bands, said   tree   bands are low-, mid- and high frequency bands   respectively.

3. Method according to claim 1 or 2, c h a r a c t e r i z e d   in that the output from the pre-processing algorithm is used as an input in a pre-correction algorithm, said pre-correction algorithm having at least one more   input adapted to receive an output from one or more optional circuits   representing certain acoustic impacts on a sound received in the listening position and said pre-correcting algorithm having an output that is fed to   the frequency band correction filter design algorithm.

4. Method according to claim 3, c h a r a c t e r i z e d   in that one of the optional circuits represents parameters measured from a loudspeaker under ideal conditions in an anechoic room.

5. Method according to claim 3 or 4, c h a r a c t e r i z e d   in that one of the optional circuits represents parameters derived from psycho acoustic conditions.

6. Method according to claim 2 – 5, c h a r a c t e r i z e d   in that in the first 30 ms the reflections in the measured impulse response are attenuated more strongly than in the rest of the impulse response.

7. Method according to claims 1 – 6, c h a r a c t e r i z e d   in that the aligning algorithm comprises aligning functionality for synchronising the output from the band filters.

8. Method according to claim 1 – 7, c h a r a c t e r i z e d   in that the aligning algorithm further comprises scaling and summation functionality.

9. Method according to claims 1 – 8, c h a r a c t e r i z e d   in that the

correction is performed in respect of certain part of a room in which the listener is placed.

10. Use of a method according to claims 1 –9 in a multi channel set-up of

5   speakers.

10

15

20

25